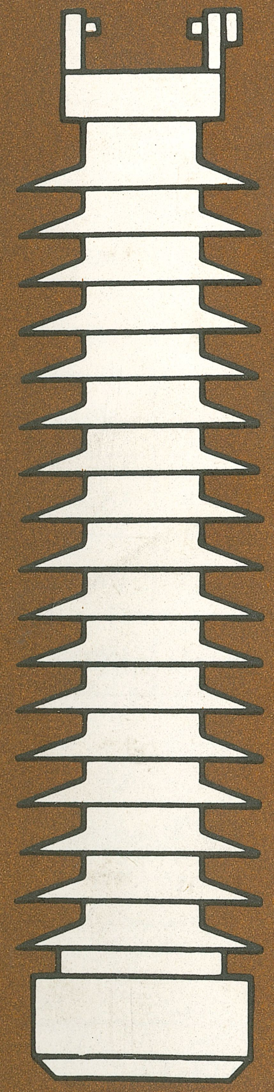
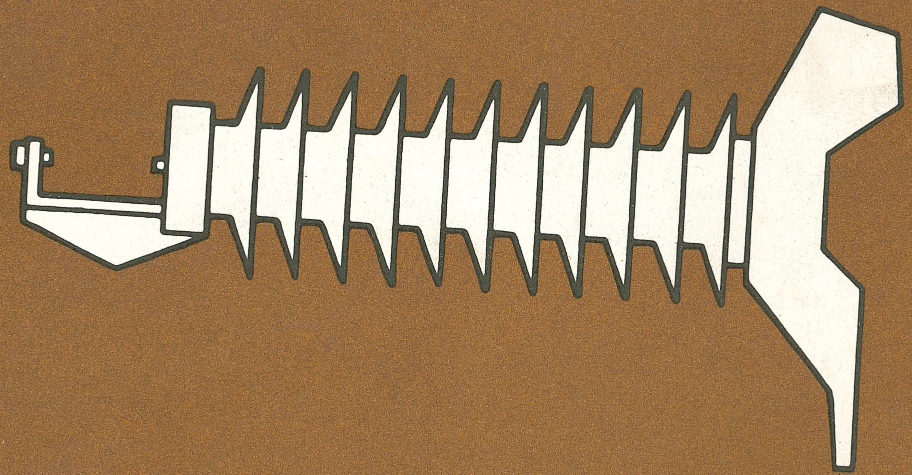
LOCKE INSULATORS®

2525 INSULATOR DRIVE • BALTIMORE, MD. 21230 • (301) 752-8020

CATALOG NO. 851

LOCKE
SOLID-CORE LINE POST INSULATORS





LOCKE INSULATORS®

BALTIMORE, MARYLAND

GUIDE TO SELECTION OF LOCKE SOLID-CORE LINE POST INSULATORS

SINGLE-UNIT TYPE

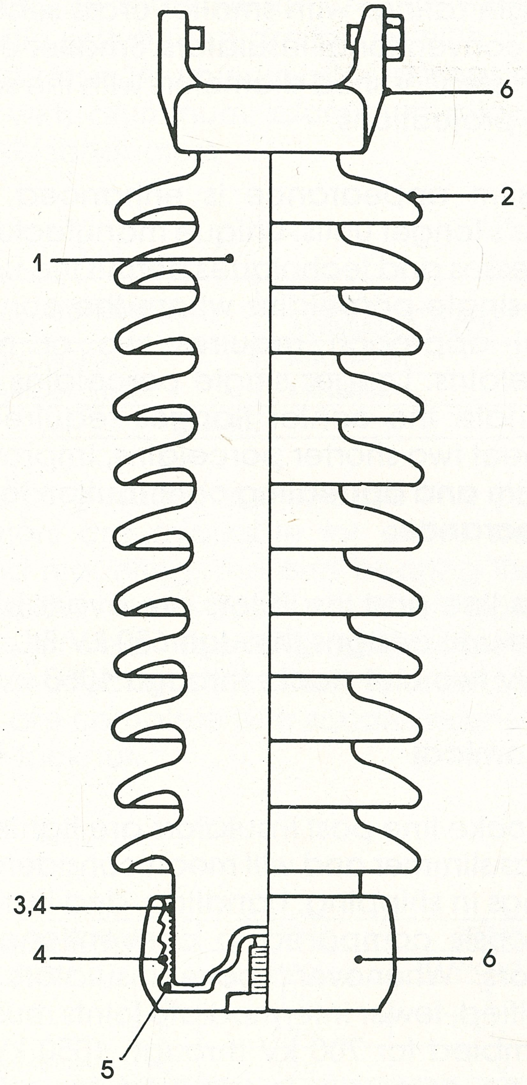
BIL kV	2800 LB. STRENGTH					4200 LB. STRENGTH	
	TIE-TOP WITH STUD BASE	VERTICAL CLAMP-TOP WITH STUD BASE	HORIZONTAL CLAMP-TOP				
			STUD BASE	CURVED BASE	PLAIN BASE	CURVED BASE	PLAIN BASE
	Page 5		Page 6	Page 7	Page 9	Page 11	Page 12
235	LS02310	LS02311	LS02312	LS02313	—	—	—
250	LS02510	LS02511	LS02512	LS02513	LS02514	LH02513	LH02514
350	—	—	—	LS03513	LS03514	LH03513	LH03514
450	—	—	—	LS04513	LS04514	LH04513	LH04514
500	—	—	—	LS05013	LS05014	LH05013	LH05014
550	—	—	—	LS05513	LS05514	LH05513	LH05514
650	—	—	—	LS06513	LS06514	LH06513	LH06514

MULTI-UNIT TYPE

BIL kV	2800 LB. STRENGTH		4200 LB. STRENGTH
	HORIZONTAL CLAMP-TOP		
	CURVED BASE	PLAIN BASE	
	Page 8	Page 10	Page 13
700	LS07023	LS07024	LH07024
750	LS07523	LS07524	LH07524
900	LS09023	LS09024	LH09024
1050	LS10523	LS10524	—

LOCKE INSULATORS, INC.
SOLID-CORE LINE POST INSULATORS

Locke Line Post Insulators are engineered to provide the performance required for today's rigorous line operations. The designs, which feature solid-core porcelain bodies made with modern equipment and technology, will provide unparalleled electrical and mechanical reliability. Insulators are offered in a wide variety of voltage and strength ratings. Special requirements should be referred to the local Locke sales representative for consultation with factory design engineers.



CONSTRUCTION DETAILS

1. The solid-core design is coupled with a high strength ceramic composition. Slim and trim, the insulator is rugged, strong and virtually puncture proof.
2. All exposed surfaces of the porcelain are glazed to provide a smooth surface which is easily cleaned of dirt or contaminants. Standard glaze colors include light gray and chocolate brown.
3. Glaze-bonded sand on the porcelain provides a reliable gripping surface for the cement used to attach the hardware.
4. To relieve thermal stresses and to distribute working stresses between components, a permanently flexible coating is applied to all components. This coating also protects the galvanized surface from chemical action of the cement.
5. Portland cement is specially compounded, mixed, and cured under optimum conditions to attach the hardware to the porcelain.
6. The insulator caps, bases, and fittings are made from the finest malleable iron, ductile iron, or low-carbon steel. All hardware is hot-dip galvanized.
7. Insulators are furnished in accordance with the provisions of ANSI Standard C29.7.

DESIGN FEATURES

Rating

Locke line post insulators are available in a variety of electrical ratings and two mechanical ratings. In view of the wide range of applications, including those influenced by contamination and other environmental factors, Locke has rated each insulator on the basis of BIL. This rating system should be helpful in coordinating with other line equipment.

Standard strength insulators have a cantilever rating of 2800 pounds. High strength insulators are 50% stronger and have a cantilever rating of 4200 pounds.

All units are proof tested in four quadrants to 50% of the cantilever rating. The maximum recommended mechanical working load is 40% of rating.

Insulator Types

There are five styles of Locke line post insulators available: tie-top, vertical clamp-top, and horizontal clamp-top all with stud base mounting; horizontal clamp-top with curved gain base and horizontal clamp-top with plain (flat) gain base.

Tie-top insulators embody the ANSI Standard neck classification and are suitable for either factory formed ties or conventional ties.

Clamp-top insulators provide a means to attach the conductor to the insulator that is simple, fast, and requires a minimum of skill. Such a clamping method provides higher reliability for tight connections and low RIV than the hand applied tie wires. Two styles of trunnion clamps are shown on page 4.

Stud-base insulators employ separable studs as shown on page 4. Studs must be ordered as a separate item.

Horizontal posts for mounting on wood poles are supplied with curved bases. These bases are designed to maintain a slight upward tilt of the insulator for pole diameters ranging from 7 to 18 inches in spite of pole shrinkage. See pages 7,8, and 11.

Horizontal posts for mounting on steel structures are supplied with plain bases, again with a slight upward tilt of the insulator. See pages 9, 10, 12, and 13.

Slim Appearance

Locke line post insulator units are slimmer and longer. Using a high strength ceramic composition enables cantilever and tensile strength ratings with smaller cross sections than conventional insulators. Smaller cores mean smaller shed diameters with the same shed projections.

The slim appearance is enhanced with Locke's longer units. Unique manufacturing processes and techniques permit the use of long single porcelains where the conventional approach requires two or more porcelains. Longer single porcelains can eliminate the center flanges required to connect two shorter porcelains, improving the slim and appealing contribution to line appearance.

Locke line post insulators are available in single unit designs through 650 kV BIL, and in only two unit stacks through 1050 kV BIL.

Economical

The Locke line post insulators are lighter as well as slimmer and will mean considerable savings in shipping, handling, and installation costs compared to conventional insulators. Whenever Locke insulators are specified, fewer intermediate joints must be assembled for 700 kV through 1050 kV BIL and no assembly is required for ratings below 700 kV BIL.

Reliable

Inherently, the solid-core design precludes lightning puncture, or puncture from any overvoltage. The solid porcelain dielectric path through the insulator is almost as long as the air path surrounding the insulator and, of course, is dielectrically much stronger than the air. Therefore, it is virtually impossible for these line post insulators to sustain internal puncture, and only external flashover can occur from all conditions of electrical stress.

The solid core design and long life of porcelain combine to provide many years of reliability in line insulation.

CLAMPS AND STUDS

Clamps for clamp-top line posts are available in four sizes and two materials. Conductor diameters ranging from 0.25 to 2.00 inches can be accommodated. Malleable or ductile iron clamps which are hot dip galvanized are for use with copper conductors. Aluminum alloy clamps are for use with aluminum, aluminum alloy, and ACSR conductors.

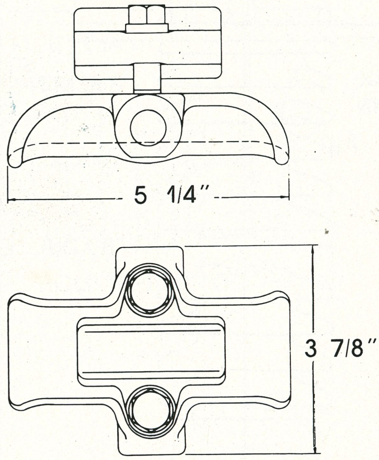


FIGURE 1

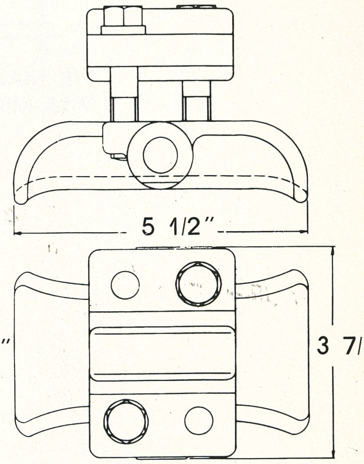
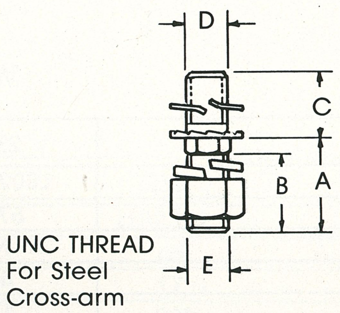


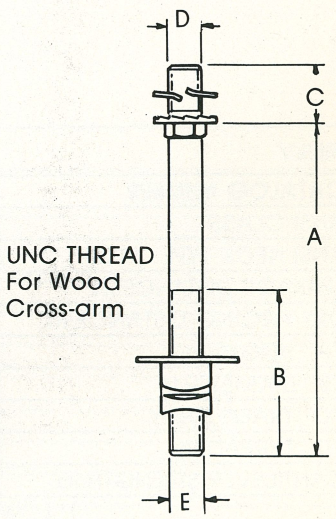
FIGURE 2

CATALOG NUMBER					
CATALOG NUMBER	FERROUS	20385	20386	20387	20388
	ALUMINUM ALLOY	20375	20376	20377	20378
CONDUCTOR DIAMETER/in.	MAXIMUM	0.56	1.06	1.50	2.00
	MINIMUM	0.25	0.50	1.00	1.50
FIGURE		1	1	1	2

Mounting studs for stud-base line post insulators are available for either steel or wood mounting. The end bearing the "D" dimension inserts into the insulator base. The studs for steel mounting are complete with nut and lockwasher. Studs for wood mounting are complete with square washer, nut, and locknut.



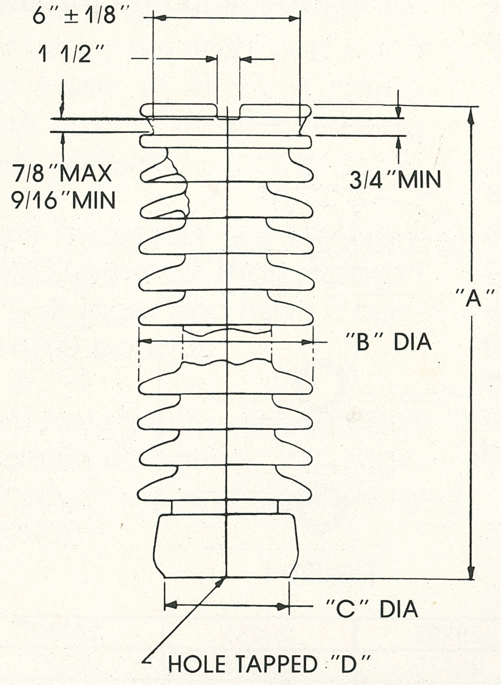
UNC THREAD
For Steel
Cross-arm



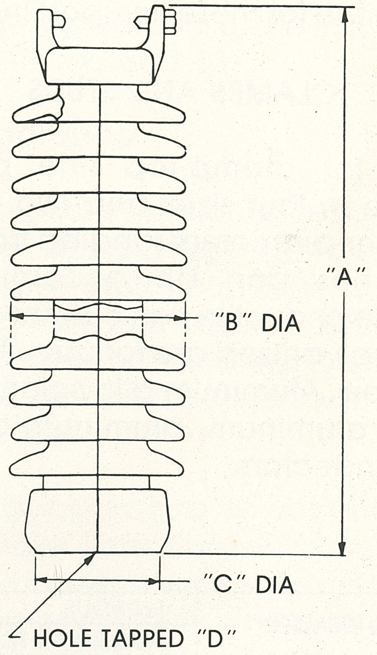
UNC THREAD
For Wood
Cross-arm

CATALOG NUMBER		27542	27543	27539	27538
Cross-arm		Steel	Wood	Steel	Wood
Dimension/in.	A	$1\frac{3}{4}$	7	2	8
	B	$1\frac{7}{16}$	$3\frac{1}{2}$	$1\frac{3}{4}$	$4\frac{1}{2}$
	C	$1\frac{7}{32}$	$1\frac{7}{32}$	$1\frac{7}{16}$	$1\frac{7}{16}$
	D	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{7}{8}$
	E	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{7}{8}$
For ANSI Class		57-5, 57-15	57-5, 57-15	—	—

TIE-TOP
WITH STUD BASE

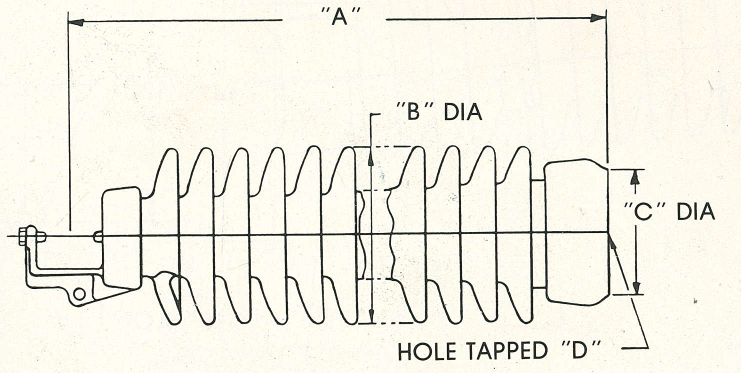


VERTICAL CLAMP-TOP
WITH STUD BASE



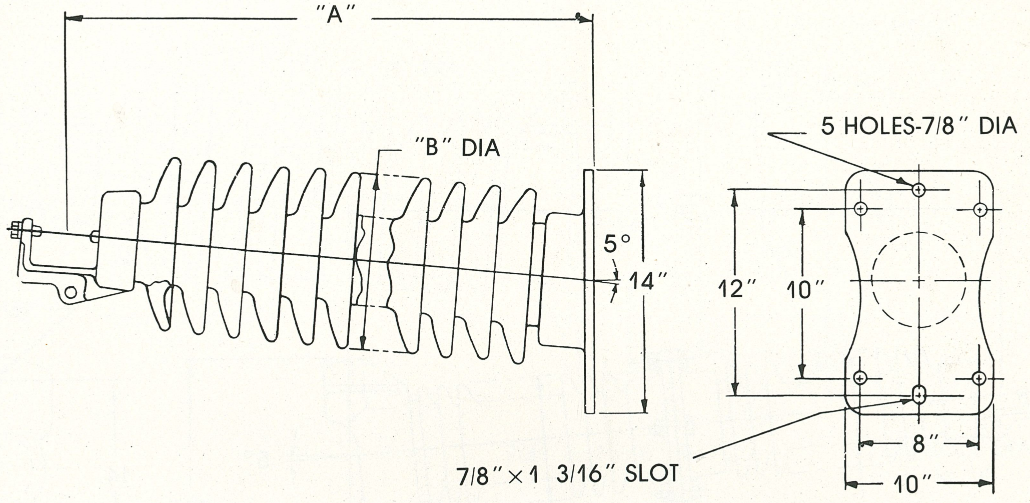
			TIE-TOP WITH STUD BASE		VERTICAL CLAMP-TOP WITH STUD BASE	
BIL/kV			235	250	235	250
CATALOG NUMBER			LS02310	LS02510	LS02311	LS02511
ANSI CLASS			57-5	—	57-15	—
ANSI NECK TYPE			N	N	—	—
LEAKAGE DISTANCE/in.			45	53	45	53
DRY ARCING DISTANCE/in.			17 1/4	19 1/4	17 1/4	19 1/4
"A" HEIGHT/in.			20	23	22 1/16	24 3/4
"B" DIAMETER/in.			7	7 1/4	6 3/4	7 1/4
"C" DIAMETER/in.			5	5 1/2	5	5 1/2
"D" THREAD/in.			3/4-10 UNC	7/8-9 UNC	3/4-10 UNC	7/8-9 UNC
CANTILEVER STRENGTH/lb.			2800	2800	2800	2800
FLASHOVER VOLTAGE	LOW FREQUENCY	DRY/kV	175	200	175	200
		WET/kV	150	170	150	170
	CRITICAL IMPULSE	POS./kV	290	330	290	330
		NEG./kV	380	425	380	425
RADIO-INFLUENCE VOLTAGE DATA	TEST VOLTAGE/kV		44	44	44	44
	MAX. RIV@1000 kHz/μV		200	200	200	200
NET WEIGHT/lb.			48	58	43	56

HORIZONTAL CLAMP-TOP
WITH STUD BASE



BIL/kV			235	250
CATALOG NUMBER			LS02312	LS02512
LEAKAGE DISTANCE/in.			45	53
DRY ARCING DISTANCE/in.			17 1/4	19 1/4
"A" HEIGHT/in.			22 3/8	25
"B" DIAMETER/in.			6 3/4	7 1/4
"C" DIAMETER/in.			5	5 1/2
"D" THREAD/in.			3/4-10 UNC	7/8-9 UNC
CANTILEVER STRENGTH/lb.			2800	2800
TENSILE STRENGTH/lb.			5000	5000
FLASHOVER VOLTAGE	LOW FREQUENCY	DRY/kV	175	200
		WET/kV	160	180
	CRITICAL IMPULSE	POS./kV	290	330
		NEG./kV	380	425
RADIO-INFLUENCE VOLTAGE DATA	TEST VOLTAGE/kV		44	44
	MAX. RIV@1000 kHz/μV		200	200
NET WEIGHT/lb.			44	58

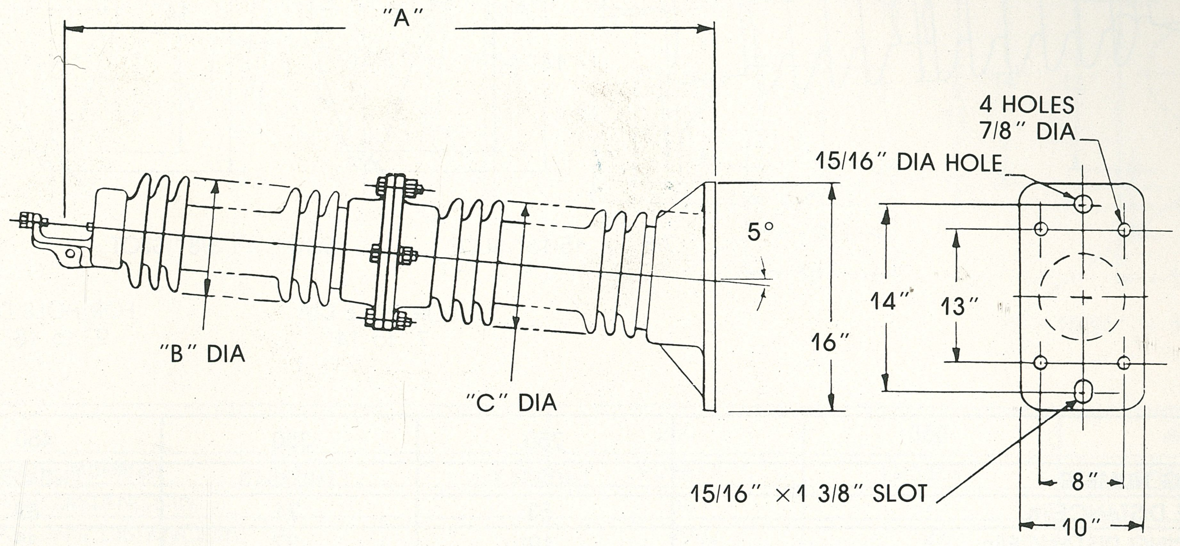
HORIZONTAL CLAMP-TOP
WITH PLAIN BASE



BIL/kV			250	350	450
CATALOG NUMBER			LS02514	LS03514	LS04514
LEAKAGE DISTANCE/in.			53	71	82
DRY ARCING DISTANCE/in.			19 1/4	27	35
"A" HEIGHT/in.			25	33	41
"B" DIAMETER/in.			7 1/4	7 1/2	7 7/8
CANTILEVER STRENGTH/lb.			2800	2800	2800
TENSILE STRENGTH/lb.			5000	5000	5000
FLASHOVER VOLTAGE	LOW FREQUENCY	DRY/kV	200	250	325
		WET/kV	180	225	290
	CRITICAL IMPULSE	POS./kV	330	430	525
		NEG./kV	425	530	660
RADIO-INFLUENCE VOLTAGE DATA	TEST VOLTAGE/kV		44	44	73
	MAX. RIV@1000 kHz/μV		200	200	200
NET WEIGHT/lb.			76	100	132

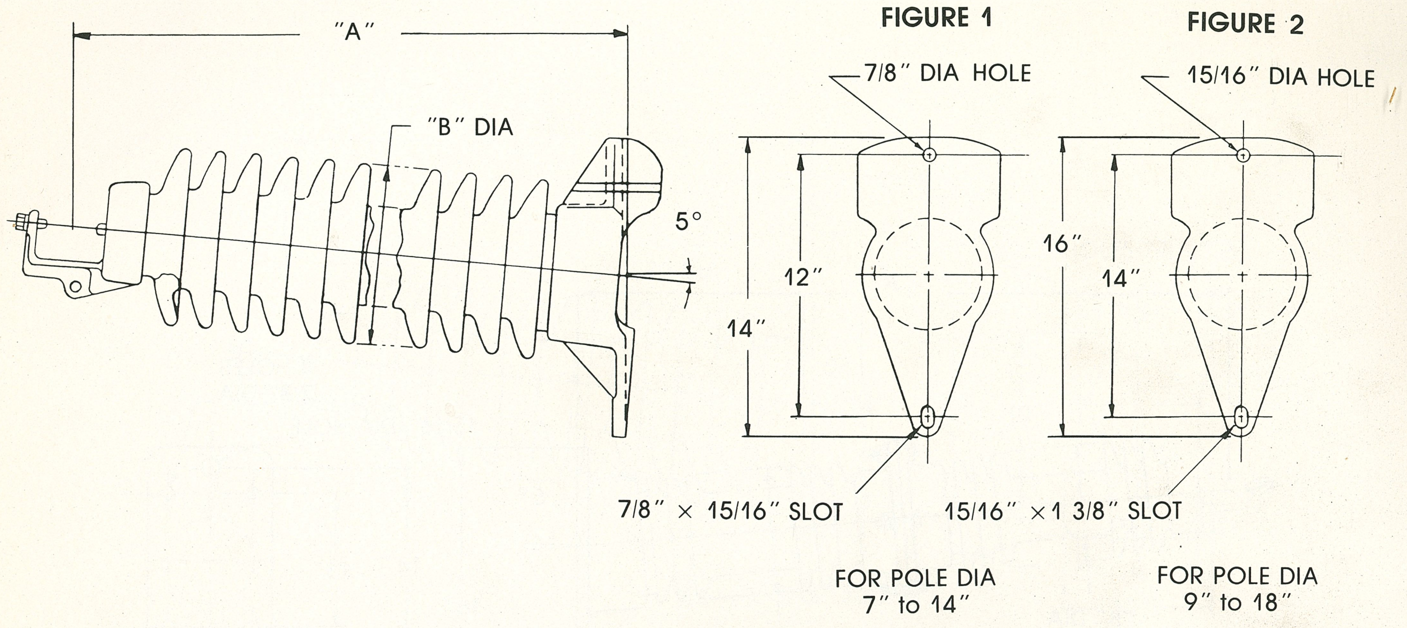
BIL/kV			500	550	650
CATALOG NUMBER			LS05014	LS05514	LS06514
LEAKAGE DISTANCE/in.			100	115	130
DRY ARCING DISTANCE/in.			41	46 1/2	52 1/2
"A" HEIGHT/in.			47	53	59
"B" DIAMETER/in.			8 1/4	8 1/2	8 5/8
CANTILEVER STRENGTH/lb.			2800	2800	2800
TENSILE STRENGTH/lb.			5000	5000	5000
FLASHOVER VOLTAGE	LOW FREQUENCY	DRY/kV	380	435	485
		WET/kV	340	390	435
	CRITICAL IMPULSE	POS./kV	610	695	780
		NEG./kV	780	900	1000
RADIO-INFLUENCE VOLTAGE DATA	TEST VOLTAGE/kV		73	73	88
	MAX. RIV@1000 kHz/μV		200	200	200
NET WEIGHT/lb.			173	207	240

HORIZONTAL CLAMP-TOP
WITH PLAIN BASE



BIL/kV			700	750	900	1050
CATALOG NUMBER			LS07024	LS07524	LS09024	LS10524
LEAKAGE DISTANCE/in.			138	154	167	185
DRY ARCING DISTANCE/in.			56	62	68	75
"A" HEIGHT/in.			69	75	81	91
"B" DIAMETER/in.			8 1/2	8 1/2	8 1/2	8 1/2
"C" DIAMETER/in.			9 1/4	9 1/4	9 1/4	9 7/16
CANTILEVER STRENGTH/lb.			2800	2800	2800	2800
TENSILE STRENGTH/lb.			5000	5000	5000	5000
FLASHOVER VOLTAGE	LOW FREQUENCY	DRY/kV	540	590	640	720
		WET/kV	485	530	575	630
	CRITICAL IMPULSE	POS./kV	860	945	1025	1210
		NEG./kV	1100	1200	1300	1450
RADIO-INFLUENCE VOLTAGE DATA	TEST VOLTAGE/kV		103	103	125	146
	MAX. RIV@1000 kHz/μV		500	500	500	500
NET WEIGHT/lb.			330	352	374	429

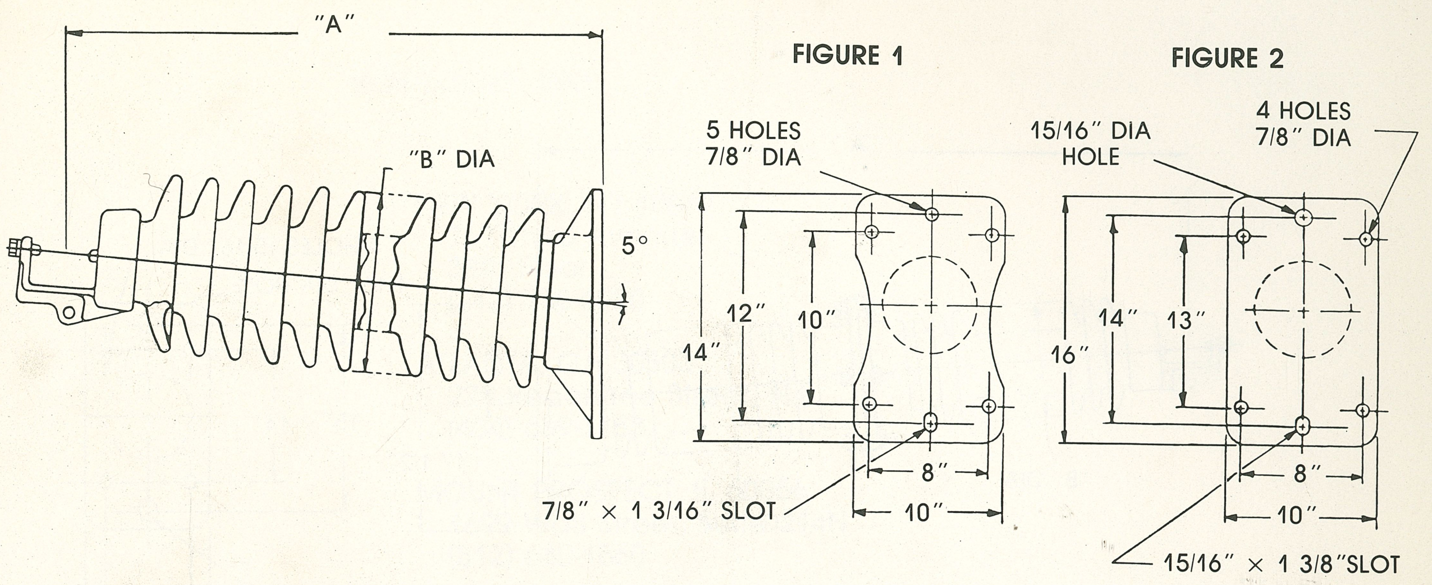
HORIZONTAL CLAMP-TOP WITH CURVED BASE



BIL/kV			250	350	450
CATALOG NUMBER			**LH02513**	**LH03513**	**LH04513**
LEAKAGE DISTANCE/in.			53	71	82
DRY ARCING DISTANCE/in.			19 1/4	27	35
"A" HEIGHT/in.			26 3/4	33 7/8	42 1/4
"B" DIAMETER/in.			7 7/8	8 1/4	8 11/16
BASE PLAN FIGURE			1	1	2
CANTILEVER STRENGTH/lb.			4200	4200	4200
TENSILE STRENGTH/lb.			5000	5000	5000
FLASHOVER VOLTAGE	LOW FREQUENCY	DRY/kV	200	250	325
		WET/kV	180	225	290
	CRITICAL IMPULSE	POS./kV	330	430	525
		NEG./kV	425	530	660
RADIO-INFLUENCE VOLTAGE DATA	TEST VOLTAGE/kV		44	44	73
	MAX. RIV@1000 kHz/μV		200	200	200
NET WEIGHT/lb.			90	125	165

BIL/kV			500	550	650
CATALOG NUMBER			**LH05013**	**LH05513**	**LH06513**
LEAKAGE DISTANCE/in.			100	115	130
DRY ARCING DISTANCE/in.			41	46 1/2	52 1/2
"A" HEIGHT/in.			47 7/8	53 7/8	60 5/8
"B" DIAMETER/in.			8 7/8	9 7/16	9 7/16
BASE PLAN FIGURE			2	2	2
CANTILEVER STRENGTH/lb.			4200	4200	4200
TENSILE STRENGTH/lb.			5000	5000	5000
FLASHOVER VOLTAGE	LOW FREQUENCY	DRY/kV	380	435	485
		WET/kV	340	390	435
	CRITICAL IMPULSE	POS./kV	610	695	780
		NEG./kV	780	900	1000
RADIO-INFLUENCE VOLTAGE DATA	TEST VOLTAGE/kV		73	73	88
	MAX. RIV@1000 kHz/μV		200	200	200
NET WEIGHT/lb.			195	262	286

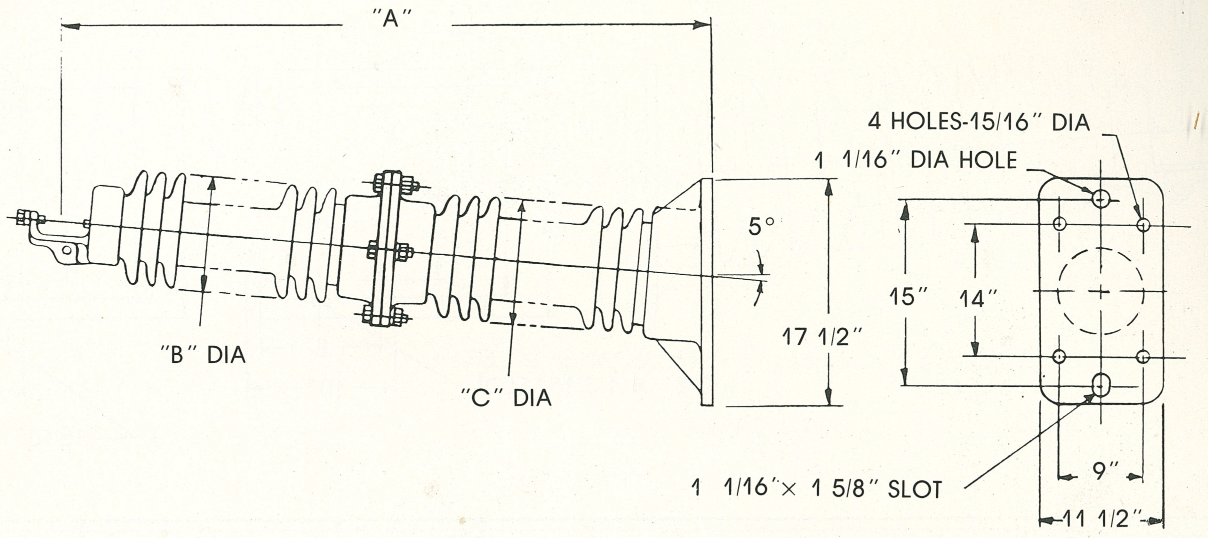
HORIZONTAL CLAMP-TOP WITH PLAIN BASE



BIL/kV			250	350	450
CATALOG NUMBER			**LH02514**	**LH03514**	**LH04514**
LEAKAGE DISTANCE/in.			53	71	82
DRY ARCING DISTANCE/in.			19 1/4	27	35
"A" HEIGHT/in.			26 1/2	33 5/8	42
"B" DIAMETER/in.			7 7/8	8 1/4	8 11/16
BASE PLAN FIGURE			1	1	2
CANTILEVER STRENGTH/lb.			4200	4200	4200
TENSILE STRENGTH/lb.			5000	5000	5000
FLASHOVER VOLTAGE	LOW FREQUENCY	DRY/kV	200	250	325
		WET/kV	180	225	290
	CRITICAL IMPULSE	POS./kV	330	430	525
		NEG./kV	425	530	660
RADIO-INFLUENCE VOLTAGE DATA	TEST VOLTAGE/kV		44	44	73
	MAX. RIV@1000 kHz/μV		200	200	200
NET WEIGHT/lb.			97	134	180

BIL/kV			500	550	650
CATALOG NUMBER			**LH05014**	**LH05514**	**LH06514**
LEAKAGE DISTANCE/in.			100	115	130
DRY ARCING DISTANCE/in.			41	46 1/2	52 1/2
"A" HEIGHT/in.			47 5/8	53 5/8	60 3/8
"B" DIAMETER/in.			8 7/8	9 7/16	9 7/16
BASE PLAN FIGURE			2	2	2
CANTILEVER STRENGTH/lb.			4200	4200	4200
TENSILE STRENGTH/lb.			5000	5000	5000
FLASHOVER VOLTAGE	LOW FREQUENCY	DRY/kV	380	435	485
		WET/kV	340	390	435
	CRITICAL IMPULSE	POS./kV	610	695	780
		NEG./kV	780	900	1000
RADIO-INFLUENCE VOLTAGE DATA	TEST VOLTAGE/kV		73	73	88
	MAX. RIV@1000 kHz/μV		200	200	200
NET WEIGHT/lb.			209	275	300

HORIZONTAL CLAMP-TOP WITH PLAIN BASE



BIL/kV			700	750	900
CATALOG NUMBER			LH07024	LH07524	LH09024
LEAKAGE DISTANCE/in.			138	154	167
DRY ARCING DISTANCE/in.			56	62	68
"A" HEIGHT/in.			$71\frac{1}{2}$	$81\frac{1}{4}$	$86\frac{7}{8}$
"B" DIAMETER/in.			$8\frac{1}{4}$	$8\frac{11}{16}$	$8\frac{7}{8}$
"C" DIAMETER/in.			$9\frac{3}{4}$	$10\frac{1}{4}$	$10\frac{1}{4}$
CANTILEVER STRENGTH/lb.			4200	4200	4200
TENSILE STRENGTH/lb.			5000	5000	5000
FLASHOVER VOLTAGE	LOW FREQUENCY	DRY/kV	540	590	640
		WET/kV	485	530	575
	CRITICAL IMPULSE	POS./kV	860	945	1025
		NEG./kV	1100	1200	1300
RADIO-INFLUENCE VOLTAGE DATA	TEST VOLTAGE/kV		103	103	125
	MAX. RIV@1000 kHz/μV		500	500	500
NET WEIGHT/lb.			374	450	484

SALES OFFICES

NGK-LOCKE, INC.

NEW YORK, NY 10017
767 Third Avenue
38th Floor
(212) 758-6020

ATLANTA, GA 30303
229 Peachtree Street, N.E.
(404) 659-3153

MOUNT PROSPECT, IL 60056
1699 Wall Street, Suite 214N
(312) 640-1660

HOUSTON, TX 77056
5333 Westheimer
Suite 730
(713) 840-1625

LOS ANGELES, CA 90071
333 So. Grand Avenue
Suite 3050
(213)625-3921

NGK INSULATORS OF CANADA, LTD.

MISSISSAUGA, ONTARIO L4Z 1S6
244 Britannia Road East
(416) 890-0813

LOCKE INSULATORS, INC.

BALTIMORE, MD 21230
2525 Insulator Drive
(301) 752-8020